ELSEVIER

Nuclear Instruments and Methods in Physics Research B 192 (2002) 448–453

NIM B
Beam Interactions with Materials & Atoms

www.elsevier.com/locate/nimb

# Author index

Ackermann, J., see Shertzer, J. . . . 192 (2002) 128
Adhikari, S.K., Positronium scattering by atoms and molecules at low energies . . . 192 (2002) 74
Anwand, W., see Sendezera, E.J. . . . 192 (2002) 202
Arai, I., see Kurita, T. . . . 192 (2002) 429
Armitage, S. and G. Laricchia, Positronium scattering from atoms and molecules . . . 192 (2002) 67
Armour, E.A.G. and C.W. Chamberlain, Low temperature hydrogen–antihydrogen scattering . . . 192 (2002) 135

Balogh, A.G., see Berky, W. . . . 192 (2002) 249
Barnes, L.D., see Sullivan, J.P. . . . 192 (2002) 3
Barozzi, M., see Karwasz, G.P. . . . 192 (2002) 157
Baumann, H., see Berky, W. . . . 192 (2002) 249
Baumann, T., H. Ikeda, M. Kurokawa, M. Miura, T. Nakamura, Y. Nishi, S. Nishimura, A. Ozawa, T. Sugimoto, I. Tanihata and M. Thoennessen, Improving neutron detection efficiency by using passive converters . . . 192 (2002) 339
Behrisch, R., see Stan-Sion, C. . . . 192 (2002) 331
Berky, W., U.C. Steinbauer, H. Baumann and A.G. Balogh, Measurement of non-Rutherford cross sections of $^{4}$He ions on $^{14}$N at a laboratory backscattering angle of 171° between 7.5 and 9.8 MeV . . . 192 (2002) 249
Bhujbal, P.M., see Dhoble, S.J. . . . 192 (2002) 280
Birke, M., see Morenzoni, E. . . . 192 (2002) 254
Biswas, P.K. and J.W. Darewych, Positronium scattering from 2s and 3s excited states of hydrogen . . . 192 (2002) 138
Bollinger, J.J., see Jelenković, B.M. . . . 192 (2002) 117
Boman, M., see Lindstam, M. . . . 192 (2002) 274
Brand, K., see Hazdra, P. . . . 192 (2002) 291
Brauer, G., see Sendezera, E.J. . . . 192 (2002) 202
Brüning, K., see Wieser, M. . . . 192 (2002) 370
Brusa, R.S., see Karwasz, G.P. . . . 192 (2002) 157
Buckman, S.J., see Sullivan, J.P. . . . 192 (2002) 3
Buenker, R.J., see Tachikawa, M. . . . 192 (2002) 40

Campeanu, R.I., R.P. McEachran and A.D. Stauffer, Distorted-wave models in positron impact ionization of atoms . . . 192 (2002) 146
Cazaux, J., A new analytical approach for the transport and the emission yield of secondary electrons from insulators . . . 192 (2002) 381
Chamberlain, C.W., see Armour, E.A.G. . . . 192 (2002) 135
Chen-Mayer, H.H., see Coakley, K.J. . . . 192 (2002) 349
Chithambo, M.L., see Sendezera, E.J. . . . 192 (2002) 202
Cianchi, L., see Spina, G. . . . 192 (2002) 415
Coakley, K.J., H.H. Chen-Mayer, G.P. Lamaze, D.S. Simons and P.E. Thompson, Calibration of a stopping power model for silicon based on analysis of neutron depth profiling and secondary ion mass spectrometry measurements . . . 192 (2002) 349
Colavecchia, F.D., see Gasaneo, G. . . . 192 (2002) 150
Coleman, P.G., Positron beams: The journey from fundamental physics to industrial application . . . 192 (2002) 83

Darewych, J.W., see Biswas, P.K. . . . 192 (2002) 138
Davidson, A.T., see Sendezera, E.J. . . . 192 (2002) 202

PII: S0168-583X(02)01195-3

de Carvalho, C.R.C., see do N. Varella, M.T. . . . 192 (2002) 225
Del Giallo, F., see Spina, G. . . . 192 (2002) 415
Dennler, G., A. Houdayer, P. Raynaud, Y. Ségui and M.R. Wertheimer, Characterization by RBS of hyper-thin $SiO_2$ layers on various polymers . . . 192 (2002) 420
Dhoble, N.S., see Dhoble, S.J. . . . 192 (2002) 280
Dhoble, S.J., P.M. Bhujbal, N.S. Dhoble and S.V. Moharil, Lyoluminescence, thermoluminescence and photodecomposition in microcrystalline powder of KCl, KBr, KI and KI:$KNO_3$ crystals . . . 192 (2002) 280
do N. Varella, M.T., C.R.C. de Carvalho and M.A.P. Lima, The Schwinger multichannel method (SMC) calculations for $Z_{eff}$ were off by a factor of $Z$ . . . 192 (2002) 225
Doudna, C., see DuBois, R.D. . . . 192 (2002) 63
DuBois, R.D., Kh. Khayyat, C. Doudna and C. Lloyd, Differential ionization measurements using positron impact . . . 192 (2002) 63
Duttagupta, S.P., see Selim, F.A. . . . 192 (2002) 197
Dwivedi, R.K., see Thareja, R.K. . . . 192 (2002) 301

Ebihara, K., see Thareja, R.K. . . . 192 (2002) 301

Forgan, E.M., see Morenzoni, E. . . . 192 (2002) 254

Gasaneo, G. and F.D. Colavecchia, A wave function for three charged particles with arbitrary masses . . . 192 (2002) 150
Gianturco, F.A., see Nishimura, T. . . . 192 (2002) 17
Gilbert, S.J., see Sullivan, J.P. . . . 192 (2002) 3
Glazov, L.G., Energy-loss spectra of swift ions: Beyond the Landau approximation . . . 192 (2002) 239
Glückler, H., see Morenzoni, E. . . . 192 (2002) 254
Greaves, R.G. and C.M. Surko, Positron trapping and the creation of high-quality trap-based positron beams 192 (2002) 90
Gribakin, G.F., Enhancement of positron annihilation on molecules due to vibrational Feshbach resonances . . 192 (2002) 26

Harmon, J.F., see Selim, F.A. . . . 192 (2002) 197
Hartung, P., see Stan-Sion, C. . . . 192 (2002) 331
Hazdra, P., K. Brand and J. Vobecký, Defect distribution in MeV proton irradiated silicon measured by high-voltage current transient spectroscopy . . . 192 (2002) 291
Heiland, W., see Wieser, M. . . . 192 (2002) 370
Hirose, T., see Kumita, T. . . . 192 (2002) 171
Houdayer, A., see Dennler, G. . . . 192 (2002) 420
Huang, Y.Y., see Kang, S.X. . . . 192 (2002) 365
Hugenschmidt, C., G. Kögel, R. Repper, K. Schreckenbach, P. Sperr, B. Straßer and W. Triftshäuser, Monoenergetic positron beam at the reactor based positron source at FRM-II . . . 192 (2002) 97
Humberston, J.W., P. Van Reeth and G. Laricchia, Correlations between cross sections and threshold energies for positronium formation and direct ionization . . . 192 (2002) 44
Hunnell, J.C., see Ward, S.J. . . . 192 (2002) 54

Ikeda, H., see Baumann, T. . . . 192 (2002) 339
Ilić, R., see Lengar, I. . . . 192 (2002) 440
Imanaka, M., see Kurita, T. . . . 192 (2002) 429
Irako, M., see Kumita, T. . . . 192 (2002) 171
Itano, W.M., see Jelenković, B.M. . . . 192 (2002) 117

Jelenković, B.M., A.S. Newbury, J.J. Bollinger, T.B. Mitchell and W.M. Itano, Sympathetically laser-cooled positrons . . . 192 (2002) 117
Jili, P.T., see Sendezera, E.J. . . . 192 (2002) 202
Jones, J.L., see Selim, F.A. . . . 192 (2002) 197
Ju, X., see Kang, S.X. . . . 192 (2002) 365

Kadoya, K., see Kumita, T. . . . 192 (2002) 171
Kajita, M., see Kumita, T. . . . 192 (2002) 171
Kamali, M.Z.M., see Ratnavelu, K. . . . 192 (2002) 185

Kang, S.X., X. Sun, X. Ju, Y.Y. Huang, K. Yao, Z.Q. Wu and D.C. Xian, Measurement and calculation of escape peak intensities in synchrotron radiation X-ray fluorescence analysis . . . . . 192 (2002) 365
Karwasz, G.P., M. Barozzi, R.S. Brusa and A. Zecca, Total cross sections for positron scattering on argon and krypton at intermediate and high energies . . . . . 192 (2002) 157
Kauppila, W.E., C.K. Kwan, D.A. Przybyla and T.S. Stein, Positron differential quasielastic scattering by molecules . . . . . 192 (2002) 162
Kawate, H., see Sueoka, O. . . . . 192 (2002) 206
Khasanov, R., see Morenzoni, E. . . . . 192 (2002) 254
Khayyat, Kh., see DuBois, R.D. . . . . 192 (2002) 63
Kidera, M., see Kurita, T. . . . . 192 (2002) 429
Kimura, M., see Tachikawa, M. . . . . 192 (2002) 40
Kobayashi, K., see Kumita, T. . . . . 192 (2002) 171
Kögel, G., see Hugenschmidt, C. . . . . 192 (2002) 97
Kövér, Á., K. Paludan and G. Laricchia, Electron ejection by positron impact ionization . . . . . 192 (2002) 167
Kubo, F., see Stan-Sion, C. . . . . 192 (2002) 331
Kumita, T., T. Hirose, M. Irako, K. Kadoya, B. Matsumoto, K. Wada, N.N. Mondal, H. Yabu, K. Kobayashi and M. Kajita, Study on laser cooling of ortho-positronium . . . . . 192 (2002) 171
Kurita, T., M. Imanaka, M. Tsukada, T. Nakagawa, M. Kidera, I. Arai and S.-M. Lee, Performance of an ECR ion source using liquid-helium-free superconducting solenoid coils (SHIVA) . . . . . 192 (2002) 429
Kurokawa, M., see Baumann, T. . . . . 192 (2002) 339
Kwan, C.K., see Kauppila, W.E. . . . . 192 (2002) 162
Kwofie, J., see Selim, F.A. . . . . 192 (2002) 197

Lamaze, G.P., see Coakley, K.J. . . . . 192 (2002) 349
Laricchia, G., see Humberston, J.W. . . . . 192 (2002) 44
Laricchia, G., see Armitage, S. . . . . 192 (2002) 67
Laricchia, G., see Kövér, Á. . . . . 192 (2002) 167
Laricchia, G., see Szłuińska, M. . . . . 192 (2002) 215
Laricchia, G., see Van Reeth, P. . . . . 192 (2002) 220
Lazarev, V., see Stan-Sion, C. . . . . 192 (2002) 331
Lee, S.-M., see Kurita, T. . . . . 192 (2002) 429
Lengar, I., J. Skvarč and R. Ilić, Fast neutron detection with coincidence counting of recoil tracks in CR-39 . 192 (2002) 440
Leventhal, M., see Mills Jr., A.P. . . . . 192 (2002) 102
Li, D.J. and L.F. Niu, Cell attachment of polypropylene surface-modified by $COOH^+$ ion implantation . . . . 192 (2002) 393
Lima, M.A.P., see do N. Varella, M.T. . . . . 192 (2002) 225
Lindstam, M., M. Boman and K. Piglmayer, Halogen lamp-assisted high rate deposition of both hard and elastic carbon films from $CH_2I_2$ . . . . . 192 (2002) 274
Lloyd, C., see DuBois, R.D. . . . . 192 (2002) 63
Loidl, M., see Sáfrán, G. . . . . 192 (2002) 407
Lu, Q., G. Zhao and Z. Zhou, Theoretical study on the role of bound electron in backward secondary electron emission induced by $He^+$ incident on solid surfaces . . . . . 192 (2002) 267
Luetkens, H., see Morenzoni, E. . . . . 192 (2002) 254
Lynn, J.E., W.J. Trela and K. Meggers, Neutron Doppler broadening studies of tantalum and tungsten metal 192 (2002) 318

Macek, J.H., see Ward, S.J. . . . . 192 (2002) 54
Makochekanwa, C., see Sueoka, O. . . . . 192 (2002) 206
Marler, J.P., see Sullivan, J.P. . . . . 192 (2002) 3
Matsumoto, B., see Kumita, T. . . . . 192 (2002) 171
McCann, J.F., see Whitehead, R.J. . . . . 192 (2002) 42
McEachran, R.P., see Campeanu, R.I. . . . . 192 (2002) 146
McEachran, R.P., see Parcell, L.A. . . . . 192 (2002) 180
Meggers, K., see Lynn, J.E. . . . . 192 (2002) 318
Meier, O., see Sáfrán, G. . . . . 192 (2002) 407
Miller, B.N. and T. Reese, Path integral simulation of positronium . . . . . 192 (2002) 176
Mills Jr., A.P. and M. Leventhal, Can we measure the gravitational free fall of cold Rydberg state positronium? 192 (2002) 102
Mills Jr., A.P., Positronium molecule formation, Bose–Einstein condensation and stimulated annihilation . . . 192 (2002) 107
Miloshevsky, G.V., V.I. Tolkach, G. Shani and S. Rozin, Calculated gadolinium atomic electron energy levels and Auger electron emission probability as a function of atomic number $Z$ . . . . . 192 (2002) 360

Mitchell, T.B., see Jelenković, B.M. . . . . 192 (2002) 117
Miura, M., see Baumann, T. . . . . 192 (2002) 339
Moharil, S.V., see Dhoble, S.J. . . . . 192 (2002) 280
Mondal, N.N., see Kumita, T. . . . . 192 (2002) 171
Morenzoni, E., H. Glückler, T. Prokscha, R. Khasanov, H. Luetkens, M. Birke, E.M. Forgan, Ch. Niedermayer and M. Pleines, Implantation studies of keV positive muons in thin metallic layers . . . . . 192 (2002) 254
Mule, S., see Srivastava, A. . . . . 192 (2002) 402

Nakagawa, T., see Kurita, T. . . . . 192 (2002) 429
Nakamura, T., see Baumann, T. . . . . 192 (2002) 339
Nasreddine, M., see Nsouli, B. . . . . 192 (2002) 311
Newbury, A.S., see Jelenković, B.M. . . . . 192 (2002) 117
Ng, S.Y., see Ratnavelu, K. . . . . 192 (2002) 185
Nicht, E.-H., see Sendezera, E.J. . . . . 192 (2002) 202
Niedermayer, Ch., see Morenzoni, E. . . . . 192 (2002) 254
Nishi, Y., see Baumann, T. . . . . 192 (2002) 339
Nishimura, T. and F.A. Gianturco, Positron-impact vibrational excitation of $CH_4$: Comparing calculations with experiments for the symmetric and antisymmetric stretching modes . . . . . 192 (2002) 17
Nishimura, S., see Baumann, T. . . . . 192 (2002) 339
Niu, L.F., see Li, D.J. . . . . 192 (2002) 393
Nolte, E., see Stan-Sion, C. . . . . 192 (2002) 331
Nsouli, B., M. Roumié, K. Zahraman, J.P. Thomas and M. Nasreddine, On the phosphorus characterization in thin $SiO_2$ (P,B) CVD layer deposited onto a silicon substrate by PIXE . . . . . 192 (2002) 311

Oberthaler, M.K., Anti-matter wave interferometry with positronium . . . . . 192 (2002) 129
Ozawa, A., see Baumann, T. . . . . 192 (2002) 339

Paludan, K., see Kövér, Á. . . . . 192 (2002) 167
Parcell, L.A., R.P. McEachran and A.D. Stauffer, Positron scattering from xenon . . . . . 192 (2002) 180
Piglmayer, K., see Lindstam, M. . . . . 192 (2002) 274
Pleines, M., see Morenzoni, E. . . . . 192 (2002) 254
Ponrathnam, S., see Srivastava, A. . . . . 192 (2002) 402
Pröbst, F., see Sáfrán, G. . . . . 192 (2002) 407
Prokscha, T., see Morenzoni, E. . . . . 192 (2002) 254
Przybyla, D.A., see Kauppila, W.E. . . . . 192 (2002) 162

Rajan, C.R., see Srivastava, A. . . . . 192 (2002) 402
Ratnavelu, K., M.Z.M. Kamali and S.Y. Ng, Optical potential studies on positron scattering by hydrogenic-type atoms . . . . . 192 (2002) 185
Ray, H., Ionizations in Ps–atom scattering . . . . . 192 (2002) 191
Raynaud, P., see Dennler, G. . . . . 192 (2002) 420
Reese, T., see Miller, B.N. . . . . 192 (2002) 176
Repper, R., see Hugenschmidt, C. . . . . 192 (2002) 97
Rohrer, L., see Stan-Sion, C. . . . . 192 (2002) 331
Roney, T., see Selim, F.A. . . . . 192 (2002) 197
Roth, J., see Stan-Sion, C. . . . . 192 (2002) 331
Roumié, M., see Nsouli, B. . . . . 192 (2002) 311
Rozin, S., see Miloshevsky, G.V. . . . . 192 (2002) 360

Sáfrán, G., M. Loidl, O. Meier, W. Seidel and F. Pröbst, Cross-sectional TEM study of the microstructure of superconducting X-ray detectors based on thin W–Al layers . . . . . 192 (2002) 407
Scates, W., see Selim, F.A. . . . . 192 (2002) 197
Schmelcher, P., see Shertzer, J. . . . . 192 (2002) 128
Schreckenbach, K., see Hugenschmidt, C. . . . . 192 (2002) 97
Ségui, Y., see Dennler, G. . . . . 192 (2002) 420
Seidel, W., see Sáfrán, G. . . . . 192 (2002) 407
Selim, F.A., D.P. Wells, J.F. Harmon, W. Scates, J. Kwofie, R. Spaulding, S.P. Duttagupta, J.L. Jones, T. White and T. Roney, Doppler broadening measurements of positron annihilation using bremsstrahlung radiation 192 (2002) 197

Sendezera, E.J., A.T. Davidson, P.T. Jili, M.L. Chithambo, W. Anwand, G. Brauer and E.-H. Nicht, Characterisation of defects in LiF implanted with $Ar^+$ using variable energy positron beam . . . . . 192 (2002) 202
Shani, G., see Miloshevsky, G.V. . . . . 192 (2002) 360
Shertzer, J., J. Ackermann and P. Schmelcher, Long-lived states of positronium in crossed electric and magnetic fields . . . . . 192 (2002) 128
Shimamura, I., see Tachikawa, M. . . . . 192 (2002) 40
Shimamura, I., see Whitehead, R.J. . . . . 192 (2002) 42
Simons, D.S., see Coakley, K.J. . . . . 192 (2002) 349
Singh, T.V., see Srivastava, A. . . . . 192 (2002) 402
Skvarč, J., see Lengar, I. . . . . 192 (2002) 440
Spaulding, R., see Selim, F.A. . . . . 192 (2002) 197
Sperr, P., see Hugenschmidt, C. . . . . 192 (2002) 97
Spina, G., L. Cianchi and F. Del Giallo, Corrections for non-homogeneity of the sample in Mössbauer *f*-factor measurements . . . . . 192 (2002) 415
Srivastava, A., T.V. Singh, S. Mule, C.R. Rajan and S. Ponrathnam, Study of chemical, optical and thermal modifications induced by 100 MeV silicon ions in a polycarbonate film . . . . . 192 (2002) 402
Stan-Sion, C., L. Rohrer, F. Kubo, V. Lazarev, P. Hartung, E. Nolte, R. Behrisch and J. Roth, Upgrading of the ultra-clean injector for depth profiling at the Munich AMS facility . . . . . 192 (2002) 331
Stauffer, A.D., see Campeanu, R.I. . . . . 192 (2002) 146
Stauffer, A.D., see Parcell, L.A. . . . . 192 (2002) 180
Stein, T.S., see Kauppila, W.E. . . . . 192 (2002) 162
Steinbauer, U.C., see Berky, W. . . . . 192 (2002) 249
Straßer, B., see Hugenschmidt, C. . . . . 192 (2002) 97
Sueoka, O., C. Makochekanwa and H. Kawate, Positron and electron total cross sections for collisions with $C_2F_6$ and $C_2H_3F_3$ molecules . . . . . 192 (2002) 206
Sugimoto, T., see Baumann, T. . . . . 192 (2002) 339
Sullivan, J.P., S.J. Gilbert, J.P. Marler, L.D. Barnes, S.J. Buckman and C.M. Surko, Low energy positron scattering and annihilation studies using a high resolution trap-based beam . . . . . 192 (2002) 3
Sun, X., see Kang, S.X. . . . . 192 (2002) 365
Surko, C.M., see Sullivan, J.P. . . . . 192 (2002) 3
Surko, C.M., see Greaves, R.G. . . . . 192 (2002) 90
Szłuińska, M., P. Van Reeth and G. Laricchia, Energy dependence of the total ionization and positronium formation cross-sections in $e^+$-Xe collisions . . . . . 192 (2002) 215
Szłuińska, M., see Van Reeth, P. . . . . 192 (2002) 220

Tachikawa, M., I. Shimamura, R.J. Buenker and M. Kimura, Positron binding by molecules . . . . . 192 (2002) 40
Tanihata, I., see Baumann, T. . . . . 192 (2002) 339
Teranishi, Y., see Whitehead, R.J. . . . . 192 (2002) 42
Thareja, R.K., R.K. Dwivedi and K. Ebihara, Interaction of ambient nitrogen gas and laser ablated carbon plume: Formation of CN . . . . . 192 (2002) 301
Thoennessen, M., see Baumann, T. . . . . 192 (2002) 339
Thomas, J.P., see Nsouli, B. . . . . 192 (2002) 311
Thompson, P.E., see Coakley, K.J. . . . . 192 (2002) 349
Tolkach, V.I., see Miloshevsky, G.V. . . . . 192 (2002) 360
Trela, W.J., see Lynn, J.E. . . . . 192 (2002) 318
Triftshäuser, W., see Hugenschmidt, C. . . . . 192 (2002) 97
Tsukada, M., see Kurita, T. . . . . 192 (2002) 429

Van Reeth, P., see Humberston, J.W. . . . . 192 (2002) 44
Van Reeth, P., see Szłuińska, M. . . . . 192 (2002) 215
Van Reeth, P., M. Szłuińska and G. Laricchia, On the normalization of the positron-impact direct ionization cross-section in the noble gases . . . . . 192 (2002) 220
Vobecký, J., see Hazdra, P. . . . . 192 (2002) 291

Wada, K., see Kumita, T. . . . . 192 (2002) 171
Ward, S.J., J.C. Hunnell and J.H. Macek, The effect of the polarization potential on low-energy atomic processes 192 (2002) 54
Wells, D.P., see Selim, F.A. . . . . 192 (2002) 197

Wertheimer, M.R., see Dennler, G. . . . . 192 (2002) 420
White, T., see Selim, F.A. . . . . 192 (2002) 197
Whitehead, R.J., J.F. McCann, Y. Teranishi and I. Shimamura, Antihydrogen formation in collisions of antiprotons with positronium: The effects of a strong laser field . . . . . 192 (2002) 42
Wieser, M., P. Wurz, K. Brüning and W. Heiland, Scattering of atoms and molecules off a magnesium oxide surface . . . . . 192 (2002) 370
Wu, Z.Q., see Kang, S.X. . . . . 192 (2002) 365
Wurz, P., see Wieser, M. . . . . 192 (2002) 370

Xian, D.C., see Kang, S.X. . . . . 192 (2002) 365

Yabu, H., see Kumita, T. . . . . 192 (2002) 171
Yao, K., see Kang, S.X. . . . . 192 (2002) 365

Zahraman, K., see Nsouli, B. . . . . 192 (2002) 311
Zecca, A., see Karwasz, G.P. . . . . 192 (2002) 157
Zhao, G., see Lu, Q. . . . . 192 (2002) 267
Zhou, Z., see Lu, Q. . . . . 192 (2002) 267

Nuclear Instruments and Methods in Physics Research B 192 (2002) 454–456

ELSEVIER

NIM B
Beam Interactions with Materials & Atoms

www.elsevier.com/locate/nimb

# Subject index

*Editorial*

Editorial, M.H. Holzscheiter . . . . . 192 (2002) 1

*Basic Data for Materials Modifications and Analysis*

Low energy positron scattering and annihilation studies using a high resolution trap-based beam, J.P. Sullivan, S.J. Gilbert, J.P. Marler, L.D. Barnes, S.J. Buckman and C.M. Surko . . . . . 192 (2002) 3
Positron-impact vibrational excitation of $CH_4$: Comparing calculations with experiments for the symmetric and antisymmetric stretching modes, T. Nishimura and F.A. Gianturco . . . . . 192 (2002) 17
Enhancement of positron annihilation on molecules due to vibrational Feshbach resonances, G.F. Gribakin . . 192 (2002) 26
Positron binding by molecules, M. Tachikawa, I. Shimamura, R.J. Buenker and M. Kimura . . . . . 192 (2002) 40
Antihydrogen formation in collisions of antiprotons with positronium: The effects of a strong laser field, R.J. Whitehead, J.F. McCann, Y. Teranishi and I. Shimamura . . . . . 192 (2002) 42
Correlations between cross sections and threshold energies for positronium formation and direct ionization, J.W. Humberston, P. Van Reeth and G. Laricchia . . . . . 192 (2002) 44
The effect of the polarization potential on low-energy atomic processes, S.J. Ward, J.C. Hunnell and J.H. Macek 192 (2002) 54
Differential ionization measurements using positron impact, R.D. DuBois, Kh. Khayyat, C. Doudna and C. Lloyd . . . . . 192 (2002) 63
Positronium scattering from atoms and molecules, S. Armitage and G. Laricchia. . . . . 192 (2002) 67
Positronium scattering by atoms and molecules at low energies, S.K. Adhikari . . . . . 192 (2002) 74
Can we measure the gravitational free fall of cold Rydberg state positronium?, A.P. Mills Jr. and M. Leventhal 192 (2002) 102
Positronium molecule formation, Bose–Einstein condensation and stimulated annihilation, A.P. Mills Jr.. . . . . 192 (2002) 107
Sympathetically laser-cooled positrons, B.M. Jelenković, A.S. Newbury, J.J. Bollinger, T.B. Mitchell and W.M. Itano. . . . . 192 (2002) 117
Long-lived states of positronium in crossed electric and magnetic fields, J. Shertzer, J. Ackermann and P. Schmelcher . . . . . 192 (2002) 128
Anti-matter wave interferometry with positronium, M.K. Oberthaler . . . . . 192 (2002) 129
Low temperature hydrogen–antihydrogen scattering, E.A.G. Armour and C.W. Chamberlain. . . . . 192 (2002) 135
Positronium scattering from 2s and 3s excited states of hydrogen, P.K. Biswas and J.W. Darewych. . . . . 192 (2002) 138
Distorted-wave models in positron impact ionization of atoms, R.I. Campeanu, R.P. McEachran and A.D. Stauffer . . . . . 192 (2002) 146
A wave function for three charged particles with arbitrary masses, G. Gasaneo and F.D. Colavecchia. . . . . 192 (2002) 150
Total cross sections for positron scattering on argon and krypton at intermediate and high energies, G.P. Karwasz, M. Barozzi, R.S. Brusa and A. Zecca . . . . . 192 (2002) 157
Positron differential quasielastic scattering by molecules, W.E. Kauppila, C.K. Kwan, D.A. Przybyla and T.S. Stein . . . . . 192 (2002) 162
Electron ejection by positron impact ionization, Á. Kövér, K. Paludan and G. Laricchia . . . . . 192 (2002) 167
Study on laser cooling of ortho-positronium, T. Kumita, T. Hirose, M. Irako, K. Kadoya, B. Matsumoto, K. Wada, N.N. Mondal, H. Yabu, K. Kobayashi and M. Kajita . . . . . 192 (2002) 171
Path integral simulation of positronium, B.N. Miller and T. Reese . . . . . 192 (2002) 176
Positron scattering from xenon, L.A. Parcell, R.P. McEachran and A.D. Stauffer . . . . . 192 (2002) 180
Optical potential studies on positron scattering by hydrogenic-type atoms, K. Ratnavelu, M.Z.M. Kamali and S.Y. Ng. . . . . 192 (2002) 185
Ionizations in Ps–atom scattering, H. Ray . . . . . 192 (2002) 191
Doppler broadening measurements of positron annihilation using bremsstrahlung radiation, F.A. Selim, D.P. Wells, J.F. Harmon, W. Scates, J. Kwofie, R. Spaulding, S.P. Duttagupta, J.L. Jones, T. White and T. Roney 192 (2002) 197

PII: S0168-583X(02)01196-5

Positron and electron total cross sections for collisions with $C_2F_6$ and $C_2H_3F_3$ molecules, O. Sueoka, C. Makochekanwa and H. Kawate . . . . . 192 (2002) 206
Energy dependence of the total ionization and positronium formation cross-sections in $e^+$-Xe collisions, M. Szłuińska, P. Van Reeth and G. Laricchia . . . . . 192 (2002) 215
On the normalization of the positron-impact direct ionization cross-section in the noble gases, P. Van Reeth, M. Szłuińska and G. Laricchia . . . . . 192 (2002) 220
The Schwinger multichannel method (SMC) calculations for $Z_{eff}$ were off by a factor of $Z$, M.T. do N. Varella, C.R.C. de Carvalho and M.A.P. Lima . . . . . 192 (2002) 225
Energy-loss spectra of swift ions: Beyond the Landau approximation, L.G. Glazov . . . . . 192 (2002) 239
Measurement of non-Rutherford cross sections of $^4$He ions on $^{14}$N at a laboratory backscattering angle of 171° between 7.5 and 9.8 MeV, W. Berky, U.C. Steinbauer, H. Baumann and A.G. Balogh . . . . . 192 (2002) 249
Calibration of a stopping power model for silicon based on analysis of neutron depth profiling and secondary ion mass spectrometry measurements, K.J. Coakley, H.H. Chen-Mayer, G.P. Lamaze, D.S. Simons and P.E. Thompson . . . . . 192 (2002) 349
Calculated gadolinium atomic electron energy levels and Auger electron emission probability as a function of atomic number $Z$, G.V. Miloshevsky, V.I. Tolkach, G. Shani and S. Rozin . . . . . 192 (2002) 360
Measurement and calculation of escape peak intensities in synchrotron radiation X-ray fluorescence analysis, S.X. Kang, X. Sun, X. Ju, Y.Y. Huang, K. Yao, Z.Q. Wu and D.C. Xian . . . . . 192 (2002) 365

*Atomic Collisions in Solids*

Implantation studies of keV positive muons in thin metallic layers, E. Morenzoni, H. Glückler, T. Prokscha, R. Khasanov, H. Luetkens, M. Birke, E.M. Forgan, Ch. Niedermayer and M. Pleines . . . . . 192 (2002) 254
Theoretical study on the role of bound electron in backward secondary electron emission induced by $He^+$ incident on solid surfaces, Q. Lu, G. Zhao and Z. Zhou . . . . . 192 (2002) 267
Scattering of atoms and molecules off a magnesium oxide surface, M. Wieser, P. Wurz, K. Brüning and W. Heiland . . . . . 192 (2002) 370
A new analytical approach for the transport and the emission yield of secondary electrons from insulators, J. Cazaux . . . . . 192 (2002) 381

*Ion Beam Modification of Materials*

Halogen lamp-assisted high rate deposition of both hard and elastic carbon films from $CH_2I_2$, M. Lindstam, M. Boman and K. Piglmayer . . . . . 192 (2002) 274
Cell attachment of polypropylene surface-modified by $COOH^+$ ion implantation, D.J. Li and L.F. Niu . . . . . 192 (2002) 393

*Effects of Radiation*

Positron beams: The journey from fundamental physics to industrial application, P.G. Coleman . . . . . 192 (2002) 83
Positron trapping and the creation of high-quality trap-based positron beams, R.G. Greaves and C.M. Surko . 192 (2002) 90
Monoenergetic positron beam at the reactor based positron source at FRM-II, C. Hugenschmidt, G. Kögel, R. Repper, K. Schreckenbach, P. Sperr, B. Straer and W. Triftshäuser . . . . . 192 (2002) 97
Lyoluminescence, thermoluminescence and photodecomposition in microcrystalline powder of KCl, KBr, KI and KI:$KNO_3$ crystals, S.J. Dhoble, P.M. Bhujbal, N.S. Dhoble and S.V. Moharil . . . . . 192 (2002) 280
Defect distribution in MeV proton irradiated silicon measured by high-voltage current transient spectroscopy, P. Hazdra, K. Brand and J. Vobecký . . . . . 192 (2002) 291
Interaction of ambient nitrogen gas and laser ablated carbon plume: Formation of CN, R.K. Thareja, R.K. Dwivedi and K. Ebihara . . . . . 192 (2002) 301
Study of chemical, optical and thermal modifications induced by 100 MeV silicon ions in a polycarbonate film, A. Srivastava, T.V. Singh, S. Mule, C.R. Rajan and S. Ponrathnam . . . . . 192 (2002) 402

*Analysis of Materials*

On the phosphorus characterization in thin $SiO_2$ (P,B) CVD layer deposited onto a silicon substrate by PIXE, B. Nsouli, M. Roumié, K. Zahraman, J.P. Thomas and M. Nasreddine . . . . . 192 (2002) 311

Neutron Doppler broadening studies of tantalum and tungsten metal, J.E. Lynn, W.J. Trela and K. Meggers . 192 (2002) 318
Cross-sectional TEM study of the microstructure of superconducting X-ray detectors based on thin W–Al layers, G. Sáfrán, M. Loidl, O. Meier, W. Seidel and F. Pröbst . . . . . 192 (2002) 407
Corrections for non-homogeneity of the sample in Mössbauer *f*-factor measurements, G. Spina, L. Cianchi and F. Del Giallo . . . . . 192 (2002) 415
Characterization by RBS of hyper-thin $SiO_2$ layers on various polymers, G. Dennler, A. Houdayer, P. Raynaud, Y. Ségui and M.R. Wertheimer . . . . . 192 (2002) 420

*Ion Sources and Beam Optics*

Upgrading of the ultra-clean injector for depth profiling at the Munich AMS facility, C. Stan-Sion, L. Rohrer, F. Kubo, V. Lazarev, P. Hartung, E. Nolte, R. Behrisch and J. Roth . . . . . 192 (2002) 331
Performance of an ECR ion source using liquid-helium-free superconducting solenoid coils (SHIVA), T. Kurita, M. Imanaka, M. Tsukada, T. Nakagawa, M. Kidera, I. Arai and S.-M. Lee . . . . . 192 (2002) 429

*Experimental Methods and Equipment*

Characterisation of defects in LiF implanted with $Ar^+$ using variable energy positron beam, E.J. Sendezera, A.T. Davidson, P.T. Jili, M.L. Chithambo, W. Anwand, G. Brauer and E.-H. Nicht . . . . . 192 (2002) 202
Improving neutron detection efficiency by using passive converters, T. Baumann, H. Ikeda, M. Kurokawa, M. Miura, T. Nakamura, Y. Nishi, S. Nishimura, A. Ozawa, T. Sugimoto, I. Tanihata and M. Thoennessen . 192 (2002) 339
Fast neutron detection with coincidence counting of recoil tracks in CR-39, I. Lengar, J. Skvarč and R. Ilić . . 192 (2002) 440